

Application No. 10/709,172
Amdt. dated November 21, 2005
Reply. to Office Action of August 19, 2005

060494-0001

REMARKS/ARGUMENTS

Status of Claims:

In the application, claims 1-2, 6, 8, 10, 12-15, 17-25 and 31-35 are currently pending, of which claims 1-2, 8, 12, 14, 15, 18-22, 31-32 are currently amended and claims 3-5, 7, 9, 11, 16, 26-30 are cancelled.

Specification/Claim Rejections under 35 U.S.C. § 112 (1st)

Paragraphs, 13, 29, 14-16, 31-32, 34 and original claims 17 state that in one preferable embodiment, glass is heated to at least 350F, and in another about 200-350F. Since the invention relates mostly to glass found in recycling centers, which is left under natural atmospheric conditions, occasionally, for example when it rains, or there is dew or too much atmospheric moisture, glass is preferably heated to a higher temperature, however when it is relatively sunny, it is heated to a lower temperature. One of ordinary skill in the art would appreciate that heating at various temperature to remove variable moisture and excess weight may be performed without undue experimentation.

Further, claim 35 was rejected under 35 USC 112, first paragraph, as it related to providing a layer of crushed glass. However, for example in the art of masonry, one of ordinary skill, without undue experiments would be able dig earth to create a pit for putting the storage tank and provide a layer of crushed glass, just as one would provide a layer of insulation between an outside and inside wall of a residential building.

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Accordingly, Applicant respectfully requests reconsideration of Section 112, paragraph rejection for the specification and claim 17.

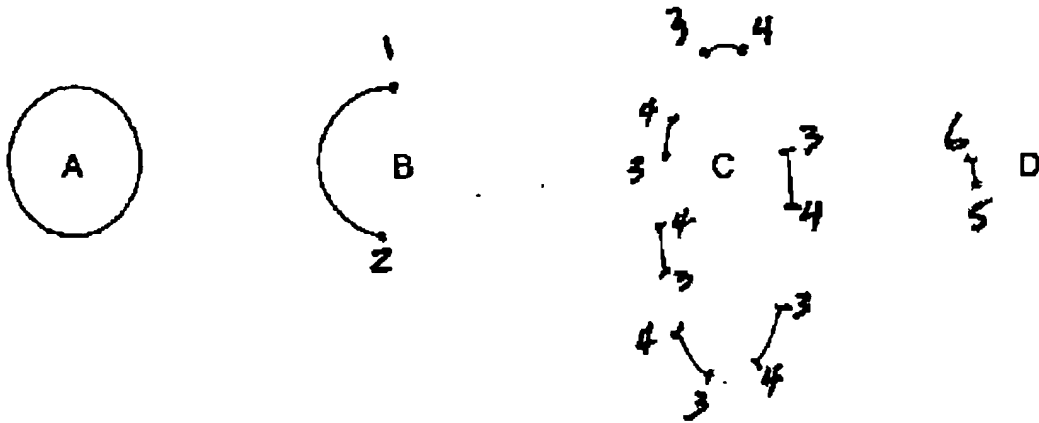
Claim Rejections under 35 U.S.C. § 112 (2nd)

In the application, claims 9, 11-15, 17, 18-20, 22-24, 32-34 and 31-35 were rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctively claims the subject matter that the applicant regards as the invention. In response, Applicant has amended these claims to clearly indicate that crushed glass which is screened is used in the invention, without raising the issue of when the crushed glass is pre-crushed or pre-screened.

Further, the amended claim 31-35 now recites "a method of containment of oil spills from an oil container, comprising the step of: providing the oil container at least in part with a layer of crushed glass." As mentioned by the Examiner, following illustrations would be within the scope of amended claim 31, especially since an oil container having a complete layer(example A) or partial layer (Example D). Applicant believes that any amount (complete or partial) of crushed glass that is used to layer the oil container will reactively adsorb oil, if the oil from the container spills over. A person of ordinary skill, without undue experimentation could ascertain that complete layer would adsorb more spilt oil than a partial layer.

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In view of the above arguments and amendments Applicant respectfully requests the Office to reconsider rejections based on Section 112, paragraph 2.

Rejection under 35 USC § 103:

Claims 1-7, 9-12, 15, 20, 21, 22, 23 were rejected under 35 U.S.C. Section 103(a) as being obvious over Canevari, Hato and Archuleta.

USP 4481113 to Canevari teaches use of "Filter Sand" for separation of oil-water emulsions. Filter sand in the disclosure is described as glass granules after caustic wash (Col.2, line 25-37 and Col. 3, Line 30-42). USP 3946953 to Hato teaches a method of making glass granules free of angular edges using a hammer crusher. (Col. 1, lines 36-37.) Further, US Patent Publication 2003/0222025 teaches environmental remediation using foamed glass article. The foamed glass article may of various shapes and sizes and is prepared by adding foaming agents. (Para 8-9).

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In contrast to the above referenced patents and publications, the present invention as claimed in amended claim 1, teaches a method of using crushed glass for removing oil from an oil containing surface, comprising the step of: applying said glass to the oil containing surface, wherein said glass is formed by the process of (a) crushing glass using an impact crusher, hammer mill, cone crusher or a roller crusher; (b) screening the crushed glass using at least one mesh; and (c) drying the crushed glass at least to 100°F; whereby the quantity of oil is reduced from the surface. Most notably, unlike in Canevari or Archuleta, where the glass is chemically treated with caustic soda, a foaming agent or other chemicals, the present invention uses chemically untreated crushed glass for removing oil from oil containing surfaces. Lack of chemical treatment has numerous advantages, including not introducing a new chemical in an environment, for example, open seas where an oil-spill has already dumped significant amount of oil in water which in turn affects its flora and fauna. Presence of additional chemicals such as caustic soda will alter the pH of the surrounding, and may enhance the damage caused by an oil spill. Further, adding no chemicals eliminates a costly step in the manufacturing process of such crushed glass. Through this invention, refuse glass from recycling centers without further chemical treatment, is capable of being further recycled for constructive uses. More importantly, the waste glass, which would otherwise occupy space in a landfill, is useful for environmental remediation, especially as associated with oil spills on high seas or land.

The combination of teachings cited do not teach using crushed glass as described above, where the crushed glass has not been chemically treated. Further, Caveri teaches that the glass granules are preferred to have smooth surface, i.e. should not be jagged or contain fissures. In the present invention however, no such limitation is observed. In Hato, the glass granules are made from a hammer crusher, however, in the present invention, the glass crushed made from a

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roller crusher was found to better adsorb the oil from oil containing surfaces, as discussed in paragraph 28. Applicant believes that since roller crusher forms "poorer wear characteristics" (Perry's Chemical Engineering Handbook (1973, 5th edition) page 8/9), it creates more jagged edges and fissures and increases the surface area of a crushed granule for adsorbing oil.

Further claims 31-34 were rejected under 35 USC 103 (a) as being obvious over Canaveri, Hato, Archuleta and USP 5183579 to Eller. Eller teaches method and system for recovery of oil from oil spill by surrounding the oil sitting on the surface of the water. Eller however does not teach use of crushed glass as claimed in amended claim 1 for removal of oil. Further, Eller does not teach providing a layer of crushed glass to an oil container preemptively before any oil spill occurs, for example providing a layer of crushed glass for an underground oil storage tank.

Accordingly, Applicant respectfully requests that claims 1-2, 6, 10, 12, 15, 20, 21, 22, 23 and 31-34 be reconsidered and obviousness rejection over Canaveri, Hato and Archuleta be withdrawn based on Section 103(a).

IDS of 11/8/04

The examiner noted that the search report inappropriately cited references. Accordingly, Applicant is providing a supplemental IDS, re-listing the references cited in the search report, along with two new references cited in the International Search Report of a related application issued on November 10, 2005..

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Applicant accordingly believes that the claimed invention as described in claims 1-2, 6, 8, 10, 12-15, 17-25 and 31-35 is patentable over the prior art, and a prompt and favourable decision is earnestly solicited.

Finally, Applicant believes that all the issues have been correctly addressed and earnestly solicit a favorable action.

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CONCLUSIONS

It is respectfully submitted that claims 1-2, 6, 8, 10, 12-15, 17-25 and 31-35 are in condition for allowance and notice to that effect is earnestly solicited. The Examiner is urged to telephone the undersigned in the event a telephone discussion would be helpful in advancing the prosecution of the present application. The Office is further authorized to charge the processing fee or any other surcharges, or underpayment, including extension of time, as deemed necessary and appropriate to the Deposit Account 07-1509 of Godfrey & Kahn, S.C.

Respectfully submitted,

GODFREY & KAHN, S.C.

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